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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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EXAMINER

JAGAN, MIRELLYS

ART UNIT

PAPER NUMBER

2859

DATE MAILED: 10/23/2002

6

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | |
|------------------------------|-----------------|------------------|
| Office Action Summary | Application No. | Applicant(s) |
| | 09/942,334 | YERLIKAYA ET AL. |
| | Examiner | Art Unit |
| | Mirellys Jagan | 2859 |

-- The MAILING DATE of this communication appears on the cover sheet with the corresponding address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on ____.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) Claim(s) ____ is/are allowed.
- 6) Claim(s) 1-22 is/are rejected.
- 7) Claim(s) ____ is/are objected to.
- 8) Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 28 August 2001 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on ____ is: a) approved b) disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. ____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

| | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>4 & 5</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character “160” has been used to designate both the probe assembly and the probe in figure 1. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-4 and 7-21 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The structural cooperative relationship between the module and the calculating unit is omitted in claims 1 and 2. Claims 3, 4, and 7-21 are rejected for being dependent on rejected base claims 1 and 2.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 3, 4, 6, 7, 9, 11, and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 5,857,777 to Schuh.

Schuh discloses an electronic thermometer having:

a removable module with a temperature sensor connected to a memory chip (EEPROM)

that stores calibration information, and

a temperature calculating unit, wherein the memory is capable of electrical communication with the temperature calculating unit when the removable module is installed to the calculating unit, and the calibration information includes at least two calibration reference point parameters wherein each of the parameters are taken at different temperatures.

6. Claims 1-3, 5, 6, 11, 13, 14, 16, 19, and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 4,858,615 to Meinema

Meinema discloses an electronic thermometer having:

a removable module with a memory that stores calibration information and temperature probe identifying information, and

a temperature calculating unit, wherein the memory is capable of electrical communication with the temperature calculating unit when the removable module is installed to the calculating unit (see column 6, lines 26-31).

7. Claims 1, 3, 4, and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 5,347,476 to McBean, Sr. [hereinafter McBean].

McBean discloses an electronic thermometer having:

a removable module (20) having mating terminals (26, 32, 30, 28). The removable module encloses a temperature sensor (22) and a memory chip (EEPROM 24), wherein the sensor is connected to the memory chip, which stores calibration information and module-specific algorithm parameters, and

a temperature calculating unit (36) having a header assembly with terminals (44, 46, 50, 48) in electrical connection with a microprocessor system, wherein the header assembly mates with the terminals of the removable module.

The memory is capable of electrical communication with the temperature calculating unit when the removable module is installed to the calculating unit, and the calibration information includes at least two calibration reference point parameters wherein each of the parameters are taken at different temperatures. The memory chip stores a unique identification serial number to identify the type of module being used (see column 2, lines 37-68, column 3, lines 1-16, 20-38, and column 5, lines 8-10).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 2, 5, and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over McBean in view of Meinema.

McBean discloses an electronic thermometer having:

a removable module (20) with a temperature sensor (22) connected to a memory chip (24) that stores calibration information and module identifying information, and a temperature calculating unit (36), wherein the removable module is removably connected to the calculating unit. The memory chip electrically communicates the information with the temperature-calculating unit when the removable module is connected to the calculating unit in order for the thermometer to calibrate the temperature sensor and identify the module.

McBean does not disclose the temperature sensor being in a probe.

Meinema discloses an electronic thermometer having a removable module that includes a probe assembly, wherein the probe assembly comprises a probe (catheter) with a temperature sensor that is connected by an electrical cable assembly to a memory chip residing in a connector component, and a temperature-calculating unit. The temperature sensor is placed within the probe of the probe assembly in order to obtain temperature measurements of living bodies.

Referring to claims 2, 5, and 6, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the removable module disclosed by McBean by placing the sensor, the memory chip, and the terminals in a removable module comprising a probe assembly as taught by Meinema, since Meinema discloses that using a removable module with a probe assembly is beneficial when measuring the temperature of a living body. Therefore, the memory chip in the thermometer of McBean and Meinema stores “probe-identifying” information since the removable module includes a probe and the stored information identifies

the type of removable module being used (see the specification on page 21, lines 4-5, where it states that the information necessary for identifying the probe includes information related to the type of removable module being used).

Furthermore, in utilizing the device disclosed by McBean and Meinema to measure temperatures, the method steps of claim 5 would inherently be followed.

10. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over McBean in view of the prior art disclosed by Applicant on page 18, lines 24-27 of the specification [hereinafter Prior Art].

McBean discloses an electronic thermometer having all of the limitations of claim 8, as stated above in paragraph 7, except for the EEPROM being a 256 bit, 1-wire, parasite-power EEPROM.

The Prior Art discloses that a 256 bit, 1-wire, parasite-power EEPROM is a known EEPROM that is commercially available from Dallas Semiconductor under the model number DS2430A.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the thermometer disclosed by McBean by replacing the EEPROM with the EEPROM from Dallas Semiconductor since the Prior Art discloses that the EEPROM from Dallas Semiconductor is known to be commercially available to one having ordinary skill in the art, and since these EEPROMS are alternative and equivalent means for providing memory in the electronic thermometer.

11. Claims 9, 11, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over McBean in view of Meinema.

McBean discloses an electronic thermometer having all of the limitations of claims 9, 11, and 13, as stated above in paragraph 7, except for the temperature sensor being in a probe of a probe assembly, the memory being in the probe assembly, and the memory storing algorithm parameters that are probe-specific.

Meinema discloses an electronic thermometer having a removable module that includes a probe assembly, wherein the probe assembly comprises a probe with a temperature sensor that is connected by an electrical cable assembly to a memory chip residing in a connector component, and a temperature-calculating unit. The temperature sensor is placed within the probe of the probe assembly in order to obtain temperature measurements of living bodies.

Referring to claims 9, 11, and 13, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the removable module disclosed by McBean by placing the sensor, the memory chip, and the terminals in a removable module comprising a probe assembly as taught by Meinema, since Meinema discloses that using a removable module with a probe assembly is beneficial when measuring the temperature of a living body.

Referring to claim 9, the module-specific algorithm parameters in the memory chip of the thermometer of McBean and Meinema are “probe-specific” parameters since the removable module includes a probe and the algorithm parameters are based on the type of removable module being used (see the specification on page 21, lines 4-5, where it states that the

information necessary for identifying the probe includes information related to the type of removable module being used).

12. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over McBean in view of U.S. Patent 5,173,840 to Kodai et al [hereinafter Kodai].

McBean discloses an electronic thermometer having all of the limitations of claim 10, as stated above in paragraph 7, except for the memory being encapsulated.

Kodai discloses a circuit board having semiconductor elements thereon. The elements on the circuit board are encapsulated by an overcoat of a moisture-resistant material for protecting them from being damaged by a liquid.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the thermometer disclosed by McBean by encapsulating the memory chip with a protective overcoat as disclosed by Kodai, since Kodai teaches that placing an overcoat on a semiconductor element is beneficial since it protects the element from being damaged by moisture.

13. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over McBean and Meinema, as applied to claims 9, 11, and 13 above, and further in view of Kodai.

McBean and Meinema disclose an electronic thermometer having all of the limitations of claim 12, as stated above in paragraph 11, except for the connections to the memory chip being protected from fluid incursion.

Kodai discloses a circuit board having semiconductor elements thereon. The elements and its connections have an overcoat of a moisture-resistant material for protecting them from being damaged by a liquid.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the thermometer disclosed by McBean and Meinema by placing an overcoat on the memory chip and its connections, as disclosed by Kodai, since Kodai teaches that placing an overcoat on a semiconductor element protects the element from being damaged by liquids.

14. Claims 14, 16, 17, and 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over McBean in view of Meinema and U.S. Patent Application Publication 2001/0004316 to Denzene et al [hereinafter Denzene].

McBean discloses an electronic thermometer having all of the limitations of claims 14, 16, 17, and 19-21, as stated above in paragraph 7, except for the temperature sensor being in a probe of a probe assembly that has a connector component, the connector component of the probe assembly having fluid-resistant mating terminals, and the header assembly being fluid-resistant.

Meinema discloses an electronic thermometer having a removable module that includes a probe assembly, wherein the probe assembly comprises a probe with a temperature sensor that is connected by an electrical cable assembly to a memory chip residing in a connector component, and a temperature-calculating unit. The temperature sensor is placed within the probe of the probe assembly in order to obtain temperature measurements of living bodies.

Denzene discloses an electrical device having a connector component that is fluid resistant. The area of the connector component that has connecting terminals is made resistant to fluid incursion in order to prevent the electrical components within the connector from being damaged by liquids (see Figures 6 and 7).

Referring to claim 14, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the removable module disclosed by McBean by placing the sensor, the memory chip, and the terminals in a removable module comprising a probe assembly as taught by Meinema, since Meinema discloses that using a removable module with a probe assembly is beneficial when measuring the temperature of a living body.

Furthermore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the removable module disclosed by McBean by making the mating terminals of the connector fluid-resistant, as disclosed by Denzene, since Denzene teaches that making the mating terminals of a connector component fluid-resistant is beneficial in order to prevent the electrical components within the connector from being damaged by liquids.

Referring to claim 17, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the thermometer disclosed by McBean, Meinema, and Denzene by also making the header assembly fluid-resistant, since Denzene teaches that making a connector fluid-resistant is beneficial in order to prevent the electrical components within the connector from being damaged by liquids.

Referring to claims 19-21, the module-specific algorithm parameters in the memory chip of the thermometer of McBean, Meinema, and Denzene are “probe-identifying” parameters since

the removable module includes a probe and the algorithm parameters are based on the type of removable module being used, which is determined by the unique identification serial number stored in the memory (see the specification on page 21, lines 4-5, where it states that the information necessary for identifying the probe includes information related to the type of removable module being used).

15. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over McBean, Meinema, and Denzene, as applied to claims 14, 16, 17, and 19-21 above, and further in view of Kodai.

McBean, Meinema, and Denzene disclose an electronic thermometer having all of the limitations of claim 15, as stated above in paragraph 14, except for the memory chip being overmolded.

Kodai discloses a circuit board having semiconductor elements thereon. The elements and its connections have an overmold of a moisture-resistant material for protecting them from being damaged by a liquid.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the thermometer disclosed by McBean, Meinema, and Denzene by placing an overmold on the memory chip, as disclosed by Kodai, since Kodai teaches that placing an overmold on a semiconductor element protects the element from being damaged by liquids.

16. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over McBean,

Meinema, and Denzene, as applied to claims 14, 16, 17, and 19-21 above, and further in view of U.S. Patent 4,008,614 to 6,179,785 to Martinosky et al [hereinafter Martinosky].

McBean, Meinema, and Denzene disclose an electronic thermometer having all of the limitations of claim 18, as stated above in paragraph 14, except for the sensor being a thermistor and the calibration parameters being resistance values.

Martinosky discloses an electronic thermometer having a probe assembly comprising a probe, and a temperature-calculating unit. The probe utilizes a thermistor as the temperature sensor. The calculating unit has calibration information that includes at least two calibration resistance values of the thermistor, wherein each of the values are taken at different temperatures.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the thermometer disclosed by McBean, Meinema, and Denzene by using a thermistor as the temperature sensor in the probe, since Martinosky teaches that a thermistor is useful for measuring temperatures when using a probe. Furthermore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the thermometer disclosed by McBean, Meinema, and Denzene by using resistance values as the calibration parameters in the temperature-calculating unit, since Martinosky teaches that these values provide calibration information when using a thermistor.

17. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over McBean in view of Meinema, Denzene, and Martinosky.

McBean discloses an electronic thermometer having:

a removable module (20) having mating terminals (26, 32, 30, 28). The removable module encloses a temperature sensor (22) and a memory chip (EEPROM 24), wherein the sensor is connected to the memory chip, which stores calibration information and module-specific algorithm parameters, and

a temperature calculating unit (36) having a header assembly with terminals (44, 46, 50, 48) in electrical connection with a microprocessor system, wherein the header assembly mates with the terminals of the removable module.

The memory is capable of electrical communication with the temperature calculating unit when the removable module is installed to the calculating unit, and the calibration information includes at least two calibration reference point parameters wherein each of the parameters are taken at different temperatures. The memory chip stores a unique identification serial number to identify the type of module being used.

McBean does not disclose the temperature sensor being in a probe of a probe assembly, the connector component of the probe assembly having fluid-resistant mating terminals, the header assembly being fluid-resistant, the sensor being a thermistor, and the calibration parameters being resistance values.

Meinema discloses an electronic thermometer having a removable module that includes a probe assembly, wherein the probe assembly comprises a probe with a temperature sensor that is connected by an electrical cable assembly to a memory chip residing in a connector component, and a temperature-calculating unit. The temperature sensor is placed within the probe of the probe assembly in order to obtain temperature measurements of living bodies.

Denzene discloses an electrical device having a connector component that is fluid resistant. The area of the connector component that has connecting terminals is made resistant to fluid incursion in order to prevent the electrical components within the connector from being damaged by liquids.

Martinosky discloses an electronic thermometer having a probe assembly comprising a probe, and a temperature-calculating unit. The probe utilizes a thermistor as the temperature sensor. The calculating unit has calibration information that includes at least two calibration resistance values of the thermistor, wherein each of the values are taken at different temperatures.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the removable module disclosed by McBean by placing the sensor, the memory chip, and the terminals in a removable module comprising a probe assembly as taught by Meinema, since Meinema discloses that using a removable module with a probe assembly is beneficial when measuring the temperature of a living body.

Furthermore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the removable module disclosed by McBean by making the mating terminals of the connector fluid-resistant, as disclosed by Denzene, since Denzene teaches that making the mating terminals of a connector component fluid-resistant is beneficial in order to prevent the electrical components within the connector from being damaged by liquids.

In addition, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the thermometer disclosed by McBean, Meinema, and

Denzene by using a thermistor as the temperature sensor in the probe, since Martinosky teaches that a thermistor is useful for measuring temperatures when using a probe. Furthermore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the thermometer disclosed by McBean, Meinema, and Denzene by using resistance values as the calibration parameters in the temperature-calculating unit, since Martinosky teaches that these values provide calibration information when using a thermistor.

Lastly, the module-specific parameters and calibration data in the memory chip of the thermometer of McBean, Meinema, Denzene, and Martinosky are "probe-identifying" parameters and probe calibration data, since the removable module includes a probe and the parameters and data are based on the type of removable module being used, which is determined by the unique identification serial number stored in the memory (see the specification on page 21, lines 4-5, where it states that the information necessary for identifying the probe includes information related to the type of removable module being used).

Conclusion

18. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following patents disclose temperature-sensing systems having a memory:

U.S. Patent 5,425,375 to Chin et al

U.S. Patent 6,283,628 to Goodwin

U.S. Patent 5,720,293 to Quinn et al

U.S. Patent Application Publication 2001/0044588 to Mault

The following patents disclose fluid-resistant overcoats for electronic components:

U.S. Patent 5,920,454 to Nomura et al

Japanese Patent 2000049434 to Rohm

The following patents disclose fluid-resistant electrical connectors:

U.S. Patent 5,721,387 to Watanabe et al

U.S. Patent 5,356,308 to Toba et al

Japanese Patent 11260457 to Nippon

Japanese Patent 08138795 to Murakami et al

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mirells Jagan whose telephone number is 703-305-0930. The examiner can normally be reached on Monday-Thursday 7:30-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego F Gutierrez can be reached on 703-308-3875. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7725 for regular communications and 703-308-7725 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

mj
October 19, 2002


Diego Gutierrez
Supervisory Patent Examiner
Technology Center 2800